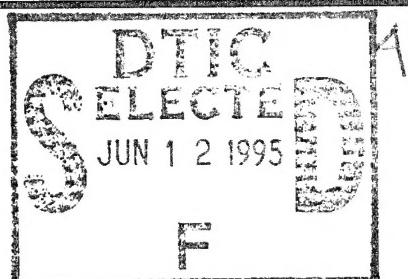


Naval Command,
Control and Ocean
Surveillance Center San Diego, CA
RDT&E Division 92152-5001

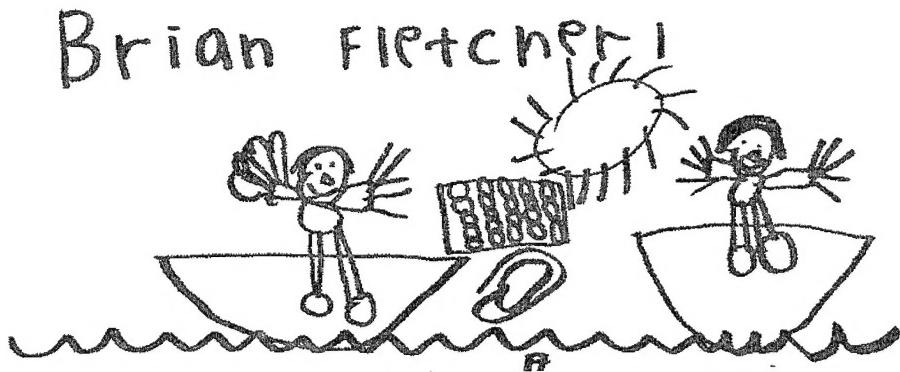


The Navy Studies a River

Edited by James Tayon
Illustrated by Bob Carignan

This document has been approved
for public release and sale; its
distribution is unlimited.

Portsmouth Naval Shipyard, Portsmouth, NH



Brian Fitchett
DOW 't POLLUTE
our rivers
19950608 134

Portsmouth Naval Shipyard - Environmental Affairs - September 1994

Dedication

This booklet is dedicated to every student, teacher, and parent who realizes the importance of protecting our environment—and acts to carry out their convictions.



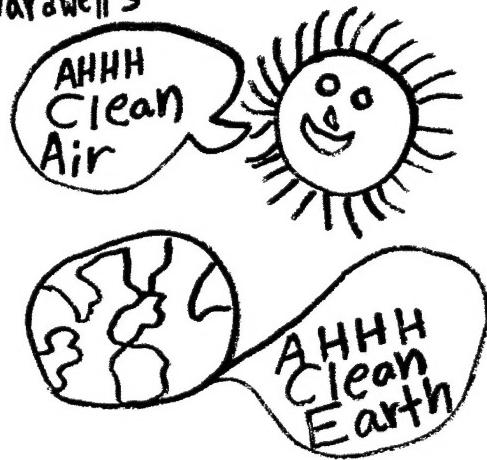
Acknowledgments

Special thanks are given to Judi Sama and Barbara Visciano, teachers in the Kittery and Eliot, Maine, public schools, respectively, and to all their imaginative students who took the time to furnish more than 200 environmental drawings. Selected drawings are used in this booklet. We are also grateful for the assistance of Colleen Brewster, Mike Pederson, and Ken Plaisted of Portsmouth Naval Shipyard.



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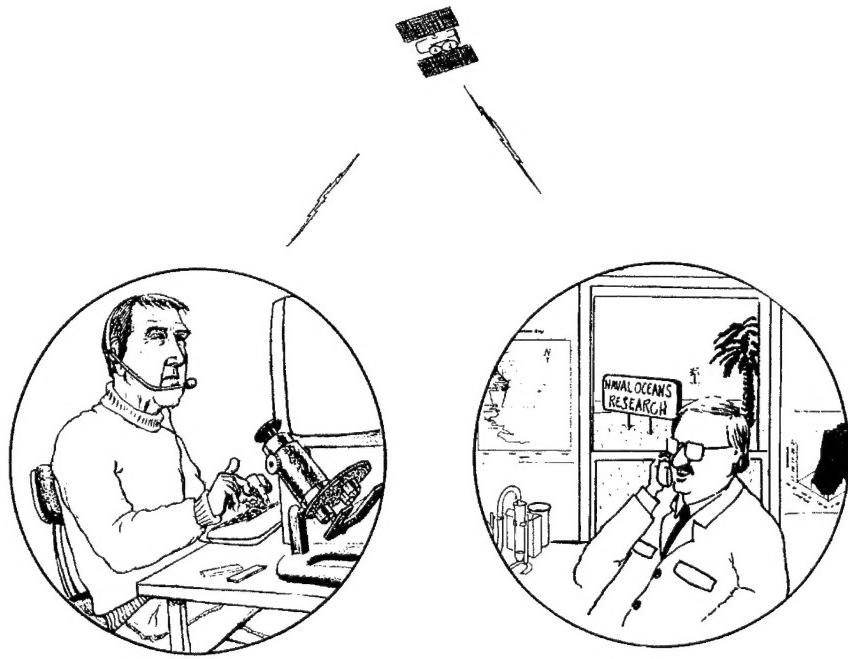
Sarah Wardwell 3



Give Earth A CHANCE

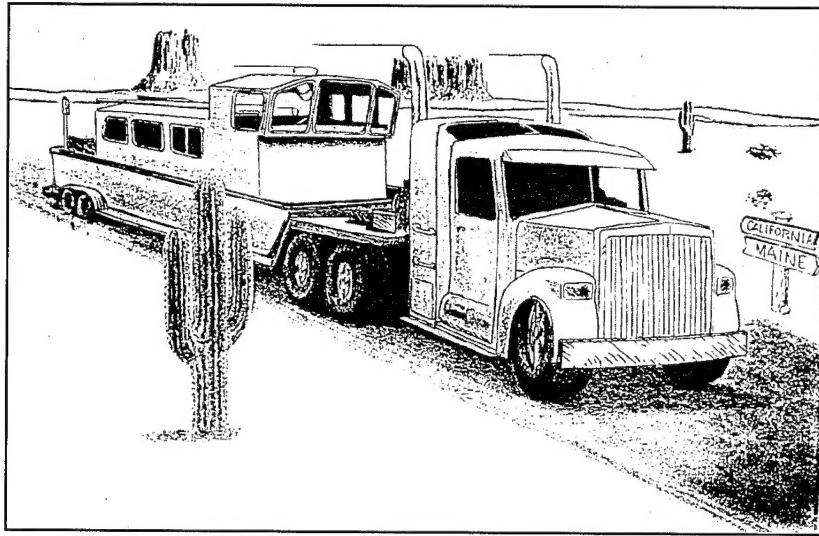


SAVE THE EARTH



"Please send a team
of scientists and the
research boat to
Portsmouth Naval
Shipyard to study the
Piscataqua River."

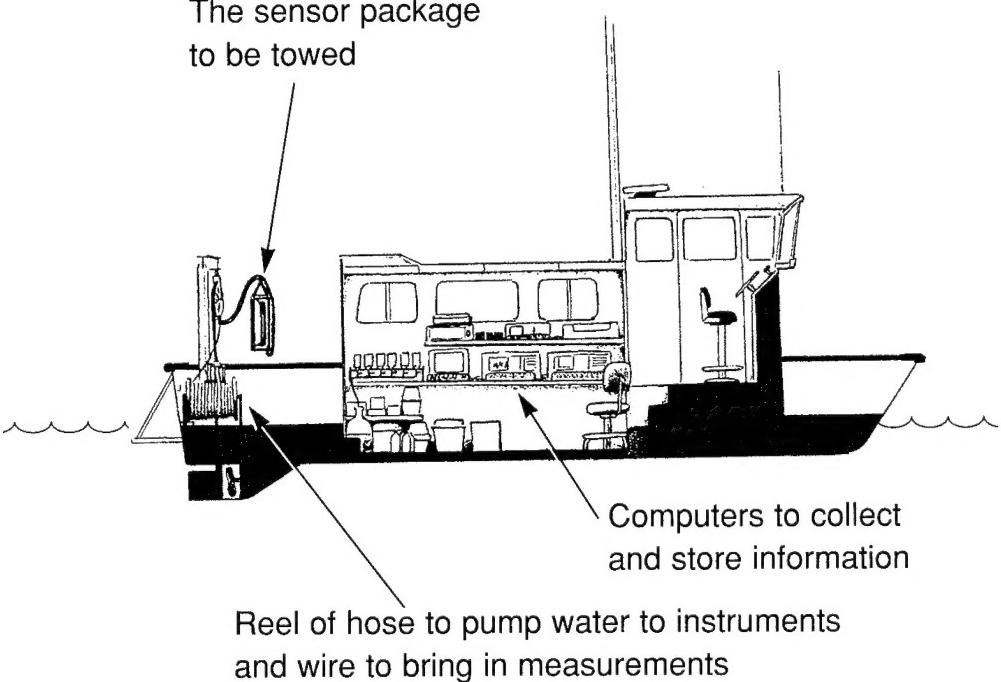
"Yes, we'll send the
team and the boat.
They will be there
July 1st, 1992."



The Research Vessel (R/V) *ECOS* travels from California to Portsmouth Naval Shipyard.

The R/V *ECOS* is one of the first research vessels of its kind. It had to be shipped from the Naval Command, Control and Ocean Surveillance Center in San Diego, California.

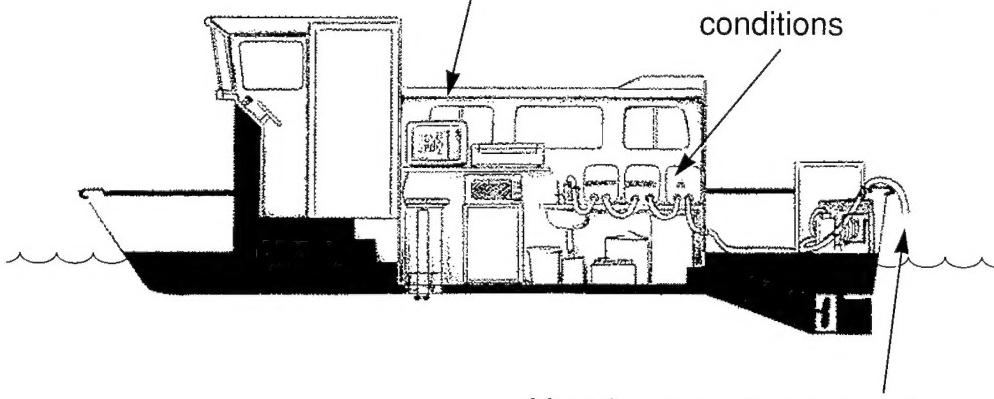
The sensor package
to be towed



These are some of the things that make the R/V *ECOS* unique.

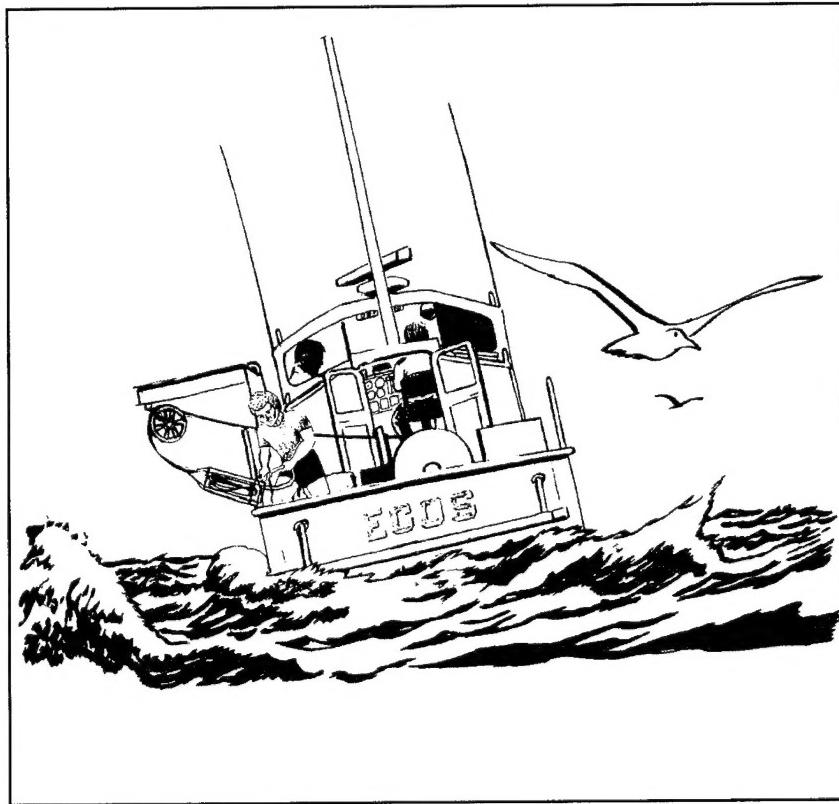
Acoustic Doppler Current Profiler
measures current flow from the top
to the bottom of the river

Instruments measure
indicators of water
conditions

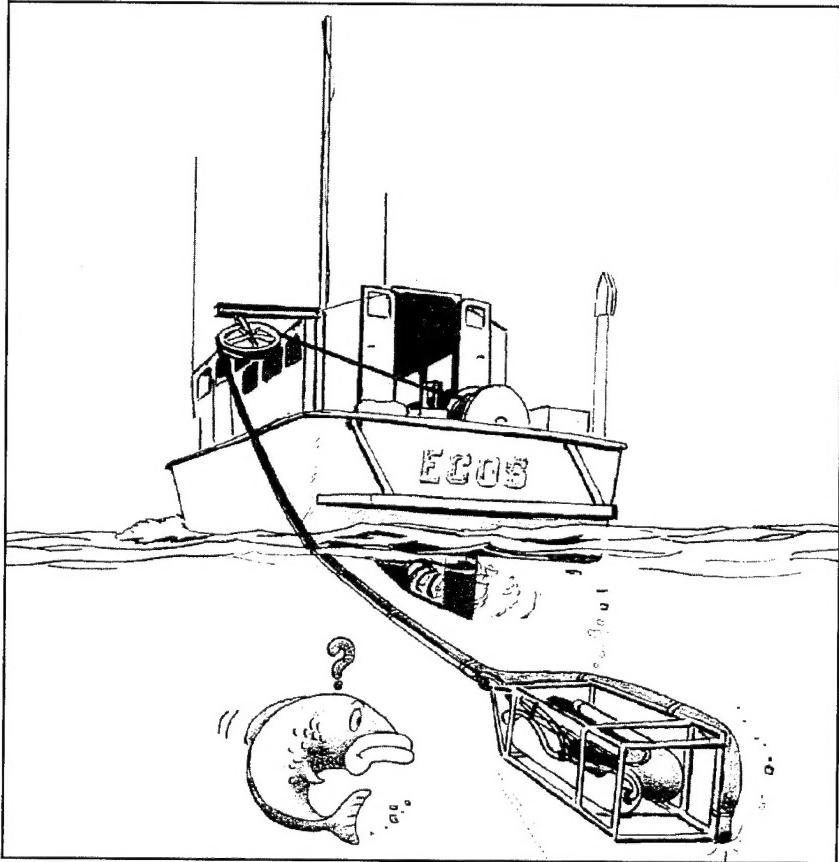


After the water is measured,
it is pumped back into the river

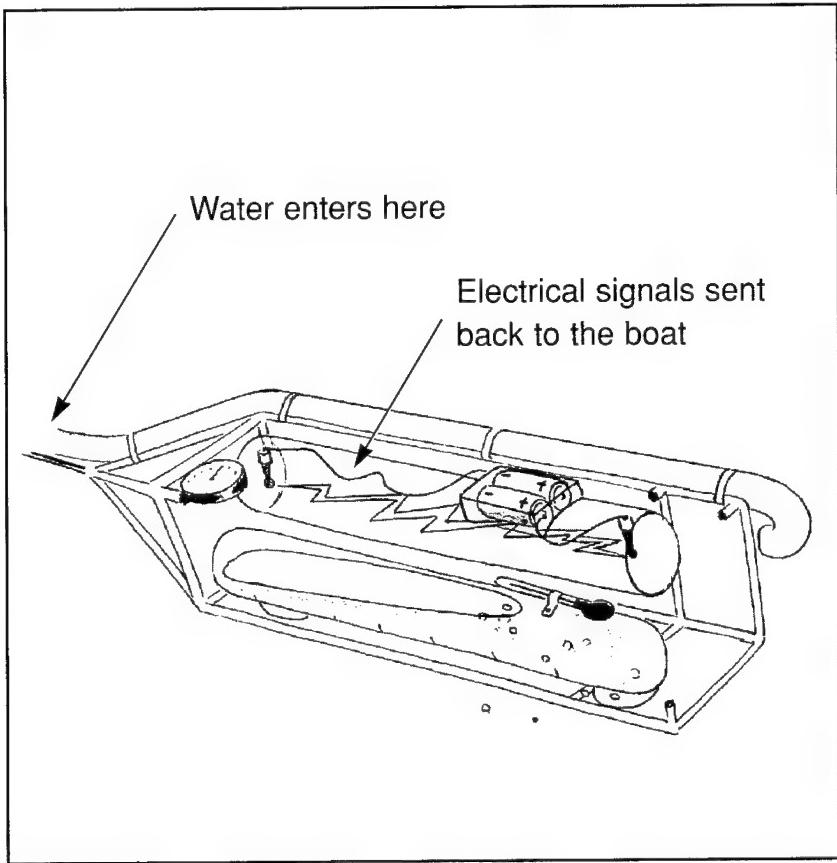
A satellite sends signals of the latitude and longitude of each sample location. This information is stored on the computer with the sample measurements. Therefore, we know exactly where each sample was taken!



We are preparing to put the sensor package into the water.



The research boat tows the sensor package. Among its other jobs, the sensor package pumps water to the instruments on the boat.

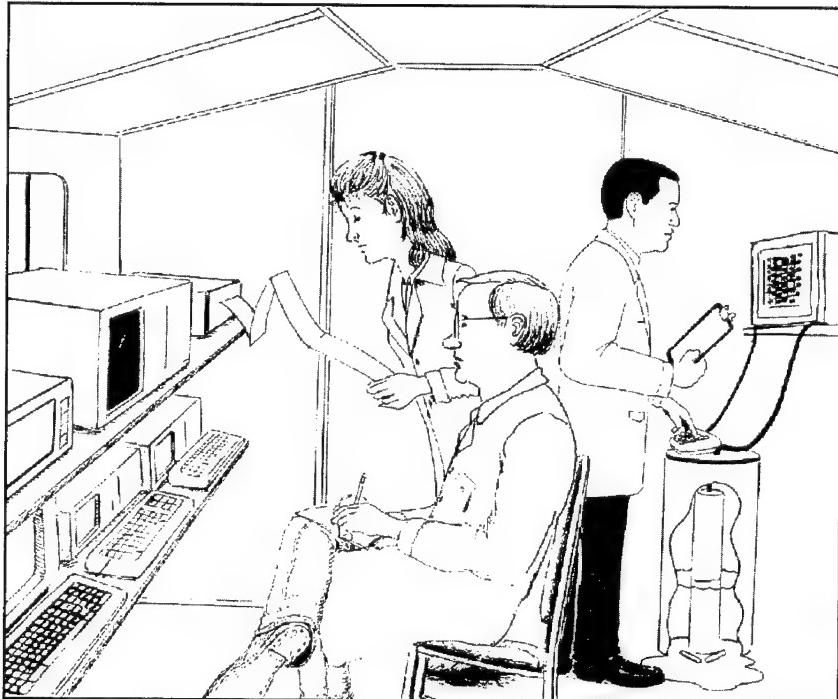


Let's measure temperature!

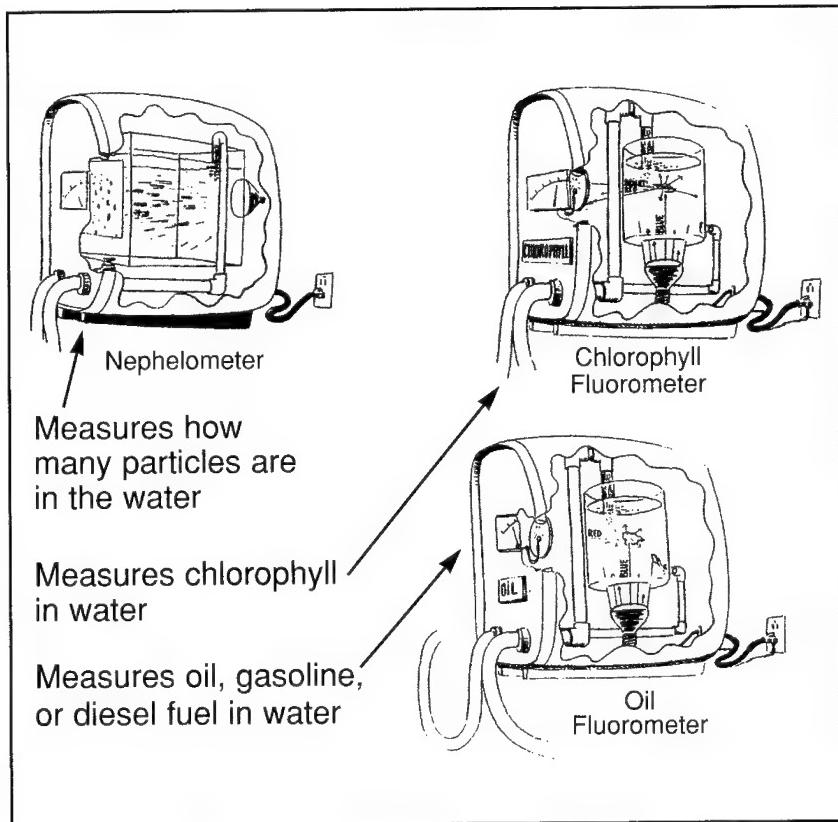
What's the salinity? (Is it river or ocean water?)

What's the oxygen content of the water? (Is there enough oxygen for the fish to breathe?)

How deep is the water?



We look at the incoming data.



These are instruments on the boat.

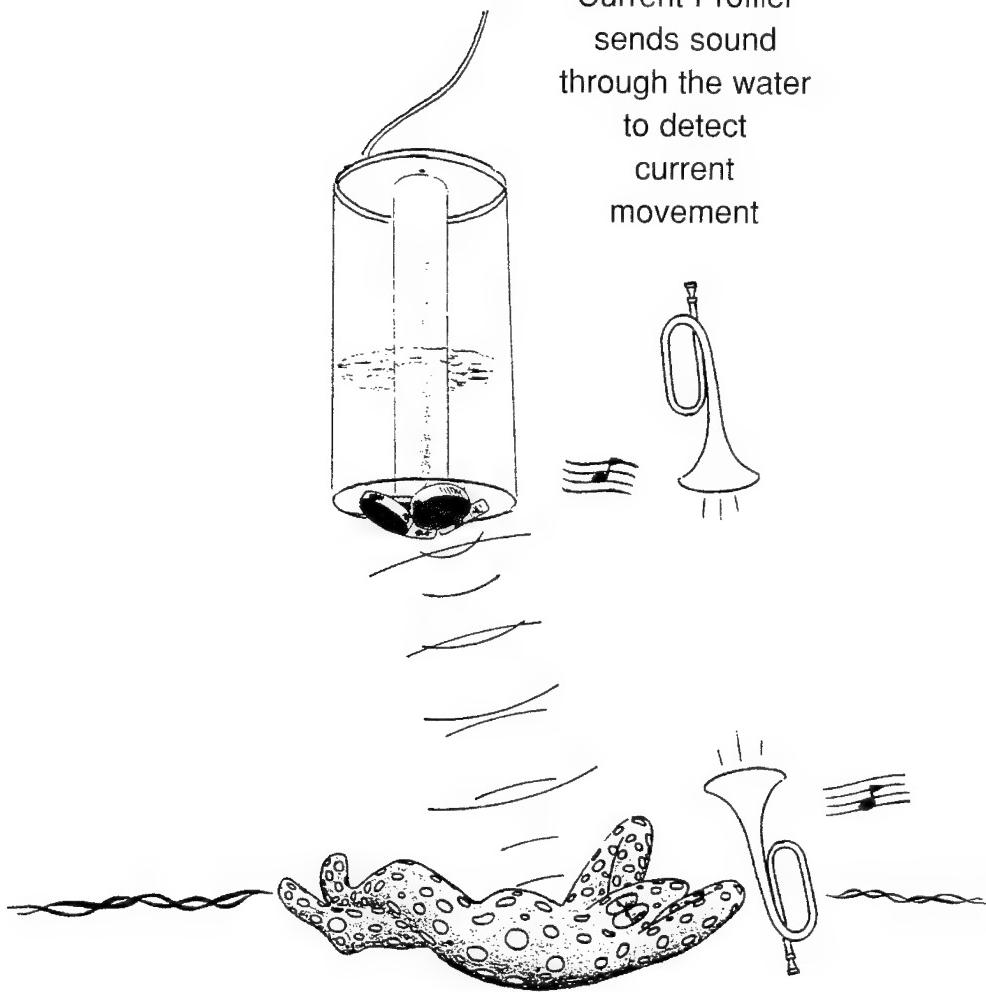
Particles tell us what is being moved by the river.

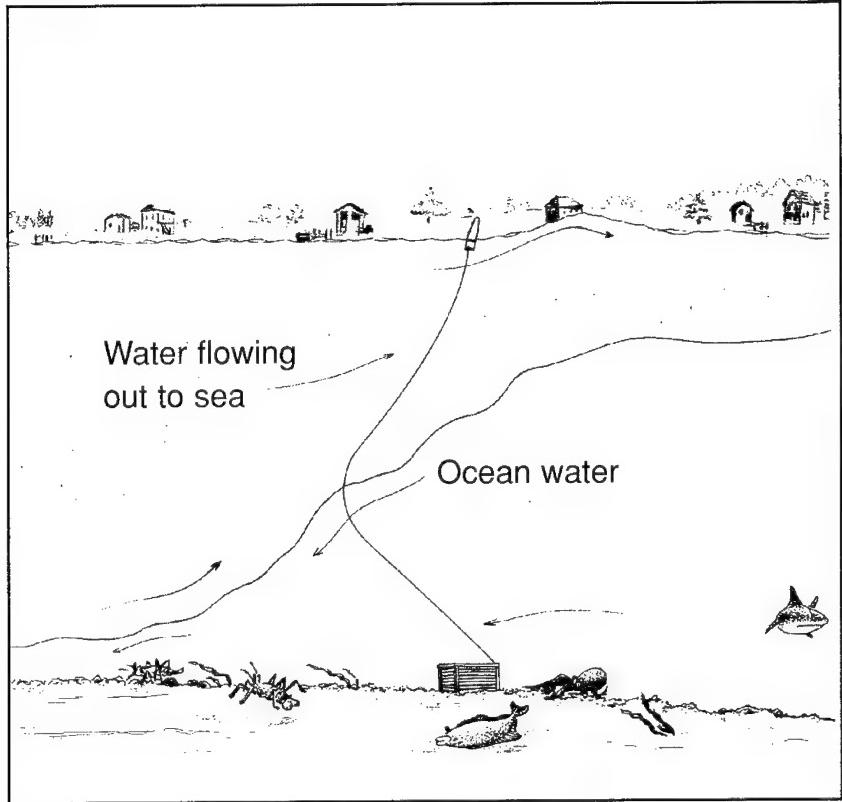
Chlorophyll is made by algae. Algae are microscopic

plants eaten by filter-feeding sea creatures.

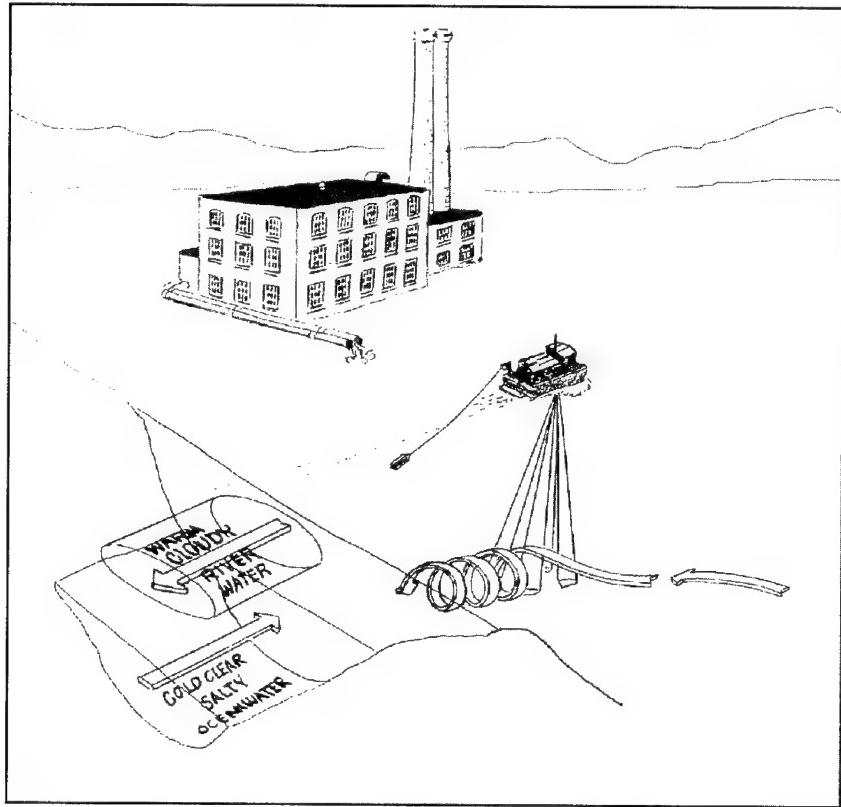
Oil, gasoline, and diesel fuel are from pollution.

The Acoustic Doppler
Current Profiler
sends sound
through the water
to detect
current
movement





Information from the Acoustic Doppler Current Profiler tells us much about the river currents.

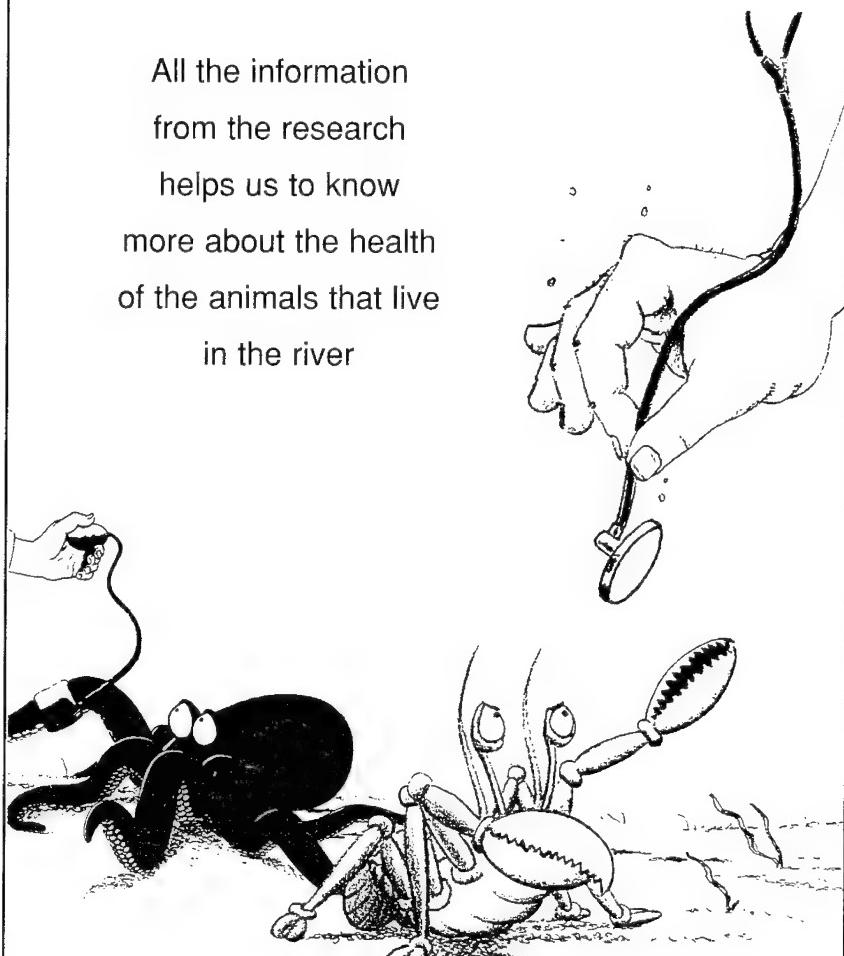


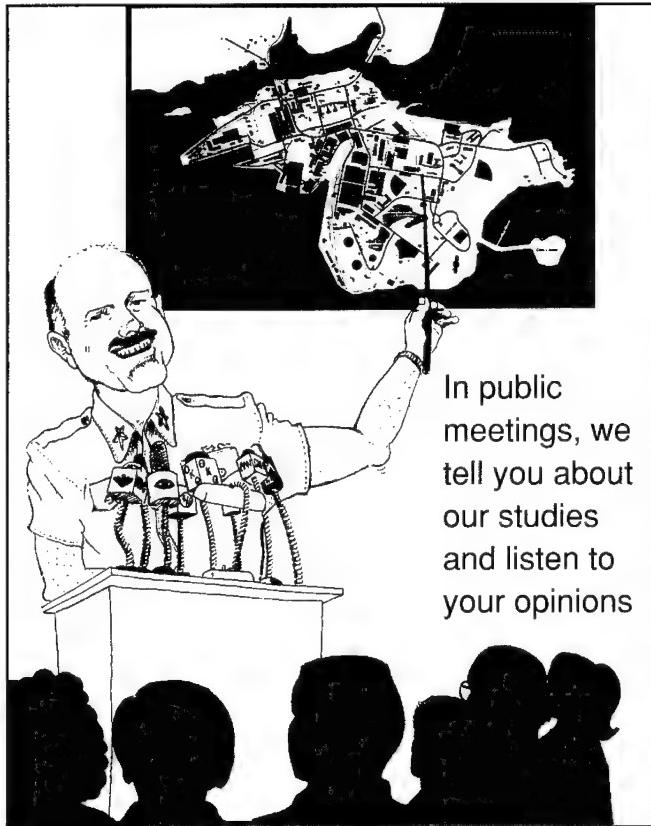
The currents in the Piscataqua River are sometimes very complicated.



Some river pollution comes from automobiles.

All the information
from the research
helps us to know
more about the health
of the animals that live
in the river





In public
meetings, we
tell you about
our studies
and listen to
your opinions

You, as a citizen, have the opportunity to hear
the results of the studies and give your
opinions.



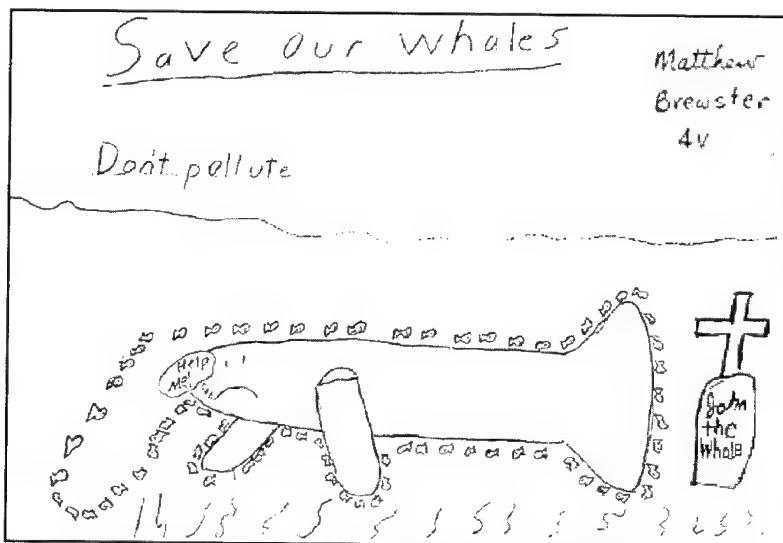
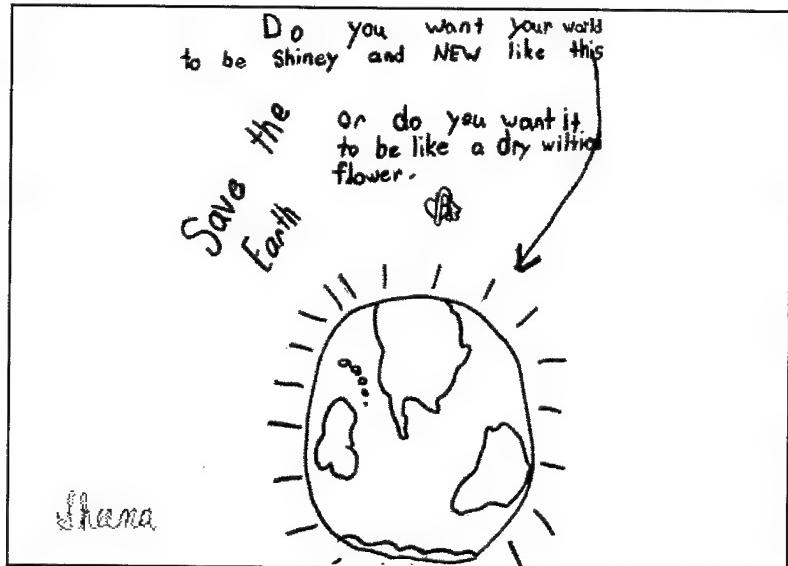
The environmental studies done by the Navy on the Piscataqua River and the Shipyard are part of the work necessary to meet the requirements for the Corrective Action Permit issued by the U.S. Environmental Protection Agency. The reports of these studies are reviewed by the U.S. Environmental Protection Agency and the Maine Department of Environmental Protection, and are on file at the Shipyard Information Repositories in the Kittery, Maine, and Portsmouth, New Hampshire, public libraries.

Newsletters and fact sheets are mailed to interested parties to report environmental news. If you would like to have more information or would like to be on the mailing list, please address your questions or requests to the Portsmouth Naval Shipyard Public Affairs Office at (207) 438-1140.

We asked students from some of the local schools to give us their ideas on how we can protect our environment.

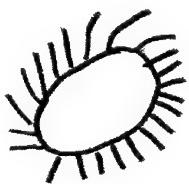
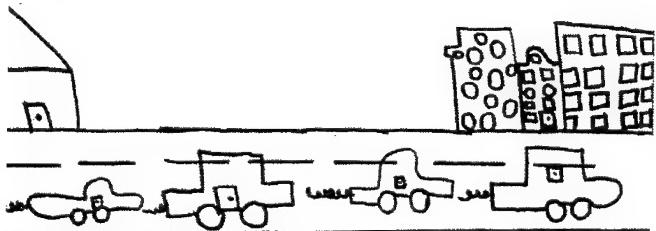
We received many excellent drawings and some of them are on the following pages.

Thank you very much for the drawings!



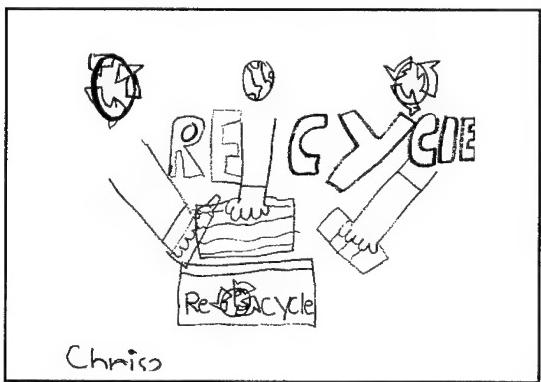
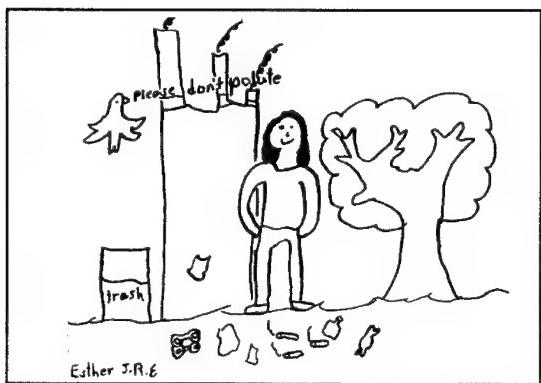
Eboni
McGellan
3

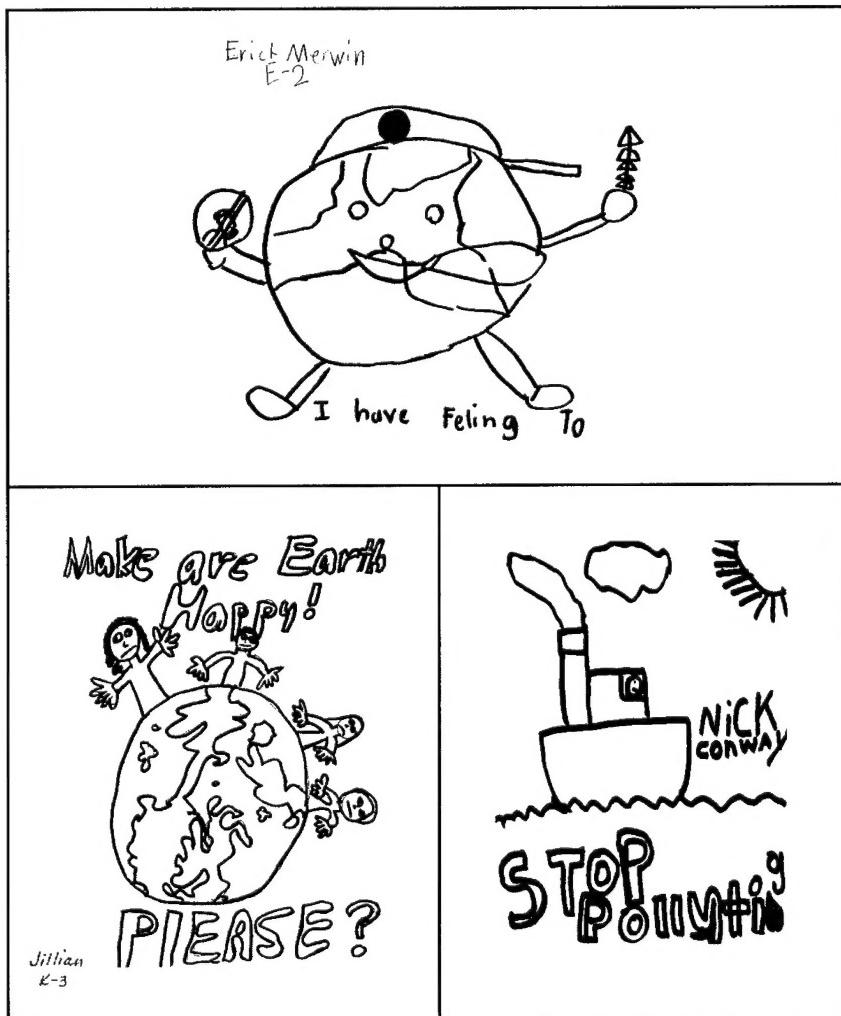
HELP STOP AIR POLLUTION
MAKE AN AIR SOLLUTION



Pick up trash.

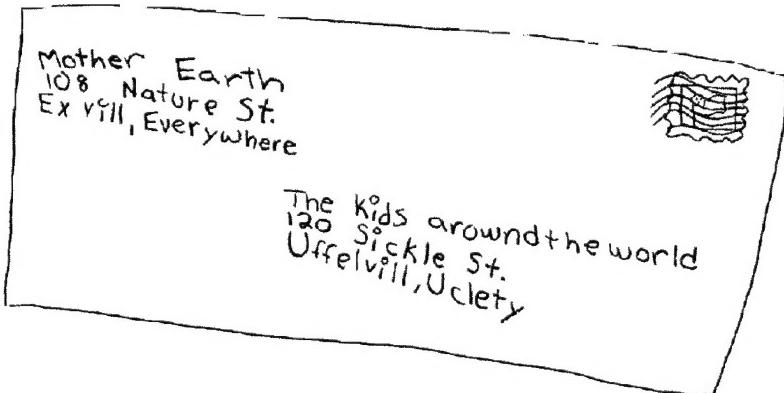
Maria I



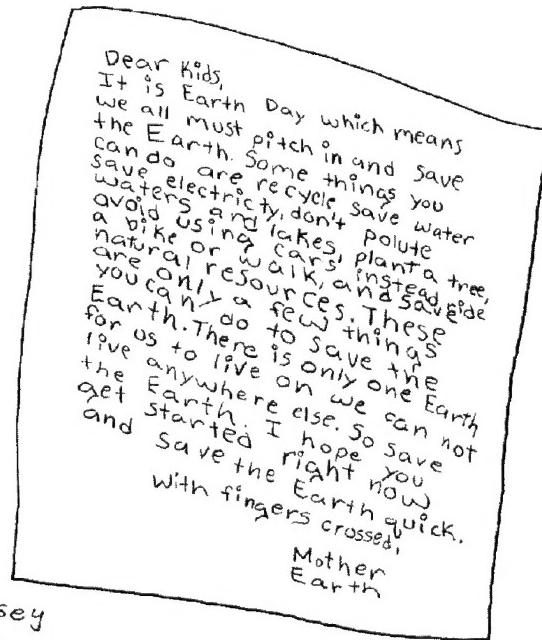




THE ENVELOPE



THE LETTER INSIDE



Kelsey
4



Reviewed and approved

A handwritten signature in black ink, appearing to read "S. Marvil".

S. P. Marvil, CAPT, USN
Executive Officer/Base
Operations Manager

TD 2679
September 1994

Approved for public release;
distribution is unlimited.

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